

Attachment to KRUSH

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WHAT IS CLAIMED IS:

1. A method of aligning a substrate and a template spaced-apart from said substrate with an activating light curable liquid disposed therebetween, said substrate having substrate alignment marks and said template having template alignment marks, said method comprising:

spreading of said activating light curable liquid, with said activating light curable liquid moving toward a region located between said substrate alignment mark and said template alignment mark; and

varying an overlay placement of said template with respect to said substrate before said activating light curable liquid reaches said region.

2. The method as recited in claim 1 wherein varying further includes varying said overlay placement of said template with respect to said substrate upon said activating light curable being proximate to said region.

3. The method as recited in claim 1 wherein varying said overlay placement further includes applying a first wavelength of light through said template, wherein said first wavelength of light causes said substrate alignment marks to be in focus and said template alignment marks to be out of focus with respect to an analysis tool; and applying a second wavelength of light through said template, wherein said second wavelength of light causes said template alignment marks to be in focus and said substrate alignment marks to be out of focus with respect to said analysis tool.

4. The method as recited in claim 1 further including impinging activating light upon said activating light curable liquid, and forming from said activating light curable liquid, solidified material.

5. The method as recited in claim 1 wherein varying further includes determining an alignment between said substrate and said template by placing said template alignment marks in superimposition with said substrate alignment marks to form a desired moiré pattern.

6. The method as recited in claim 1 wherein said activating light curable liquid is further disposed on said substrate as a plurality of spaced-apart droplets.

7. The method as recited in claim 1 wherein said method further includes impinging activating light upon said activating light curable liquid, with said template being substantially transparent to said activating light.

8. The method as recited in claim 1 further including forming said template from a group of materials consisting of silicon, gallium arsenide, quartz, fused-silica, sapphire, organic polymers, siloxane polymers, borosilicate glass, fluorocarbon polymers and a combination thereof.

9. The method as recited in claim 1 further including providing said activating light curable liquid with a viscosity of less than about 20 centipoise, measured at 25 °C.

10. The method as recited in claim 1 further including providing said activating light curable liquid with a viscosity of less than about 5 centipoise, measured at 25 °C.

11. The method as recited in claim 1 further including reducing a distance between said template and said substrate to cause contact of a portion of said activating light curable liquid with said template, with said template forming a pattern in said activating light curable liquid complimentary to a shape of said template.

12. A method of aligning a substrate and a template spaced-apart from said substrate with an activating light curable liquid disposed therebetween, said substrate having substrate alignment marks and said template having template alignment marks, said method comprising:

spreading of said activating light curable liquid, with said activating light curable liquid moving toward a region located between said substrate alignment mark and said template alignment mark; and

varying an overlay placement of said template with respect to said substrate and solidifying said activating light curable liquid before said activating light curable liquid reaches said region.

13. The method as recited in claim 12 wherein varying further includes determining an alignment between said substrate and said template by placing said template

alignment marks in superimposition with said substrate alignment marks to form a desired moiré pattern.

14. The method as recited in claim 12 wherein varying said overlay placement further includes applying a first wavelength of light through said template, wherein said first wavelength of light causes said substrate alignment marks to be in focus and said template alignment marks to be out of focus with respect to an analysis tool; and applying a second wavelength of light through said template, wherein said second wavelength of light causes said template alignment marks to be in focus and said substrate alignment marks to be out of focus with respect to said analysis tool.

15. The method as recited in claim 12 wherein solidifying further includes impinging activating light upon said activating light curable liquid, and forming from said activating light curable liquid, solidified material.

16 ~~17~~. The method as recited in claim 12 further including contacting a portion of said activating light curable liquid with said template, with said template forming a pattern in said activating light curable liquid complimentary to a shape of said template.

17 ~~18~~. The method as recited in claim 12 wherein said activating light curable liquid is further disposed on said substrate as a plurality of spaced-apart droplets.

¹⁸ ~~19~~. The method as recited in claim 12 wherein spreading further includes reducing a distance between said substrate and said template to cause spreading of said activating light curable liquid on said surface.

¹⁹ ~~20~~. A method of aligning a substrate and a template spaced-apart from said substrate, said substrate having substrate alignment marks and said template having template alignment marks, said method comprising:

disposing an activating light curable liquid between said substrate and said template;

reducing a distance between said substrate and said template to cause a dispersion of said activating light curable liquid; and

varying an overlay placement of said template with respect to said substrate such that said template alignment marks are substantially aligned with said substrate alignment marks before said dispersion causes said activating light curable liquid to cover an area between said substrate alignment marks and said template alignment marks.

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²⁰ ~~21~~. The method as recited in claim ~~20~~ wherein varying further includes determining an alignment between said substrate and said template by placing said template alignment marks in superimposition with said substrate alignment marks to form a desired moiré pattern.

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²¹ ~~22~~. The method as recited in claim ~~20~~ wherein varying said overlay placement further includes applying a first wavelength of light through said template, wherein said

first wavelength of light causes said substrate alignment marks to be in focus and said template alignment marks to be out of focus with respect to an analysis tool; and applying a second wavelength of light through said template, wherein said second wavelength of light causes said template alignment marks to be in focus and said substrate alignment marks to be out of focus with respect to said analysis tool.

22 ¹⁹~~25~~. The method as recited in claim ~~20~~ further including impinging activating light upon said activating light curable liquid, and forming from said activating light curable liquid, solidified material.

23 ¹⁹~~24~~. The method as recited in claim ~~20~~ wherein reducing said distance further includes contacting a portion of said activating light curable liquid with said template, with said template forming a pattern in said activating light curable liquid complimentary to a shape of said template.

24 ¹⁹~~25~~. The method as recited in claim ~~20~~ wherein said activating light curable liquid is further disposed on said substrate as a plurality of spaced-apart droplets.